

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Vladimir Fuflyigin  
Serial No. : 10/720,453  
Filed : November 24, 2003  
Title : DIELECTRIC WAVEGUIDE AND METHOD OF MAKING THE SAME

Art Unit : 1762  
Examiner : David P. Turocy  
Conf. No. : 4085

**MAIL STOP AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Applicant requests consideration of the references listed on the attached PTO-1449 form. Under 37 C.F.R. § 1.98 (a)(2)(ii), only copies of foreign patent documents and/or non-patent literature are enclosed. Copies of any listed U.S. patents or U.S. patent application publications can be provided upon request.

The following application is related to the present application in that it claims the benefit of, or priority to, one or more common applications:

1. U.S. Patent Application Serial No. 10/720,606, filed on November 24, 2003, now published as U.S. Publication No. US 2004-0141702 A1.

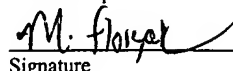
We invite the Examiner to review the prosecution file for this related application because they may disclose and claim similar subject matter. We presume that the Examiner has access to these files; however, we are happy to provide such files upon request.

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

June 14, 2006

Date of Deposit

  
Signature

Mary K. Florczak

Typed or Printed Name of Person Signing Certificate

06/16/2006 CCHAU1 00000074 10720453

02 FC:1806

180.00 OP

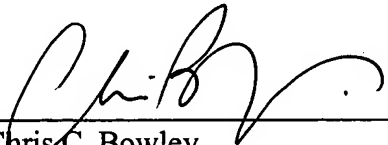
Applicant : Vladimir Fuflyigin  
Serial No. : 10/720,453  
Filed : November 24, 2003  
Page : 2 of 2

Attorney's Docket No.: 13445-026001 / OG16

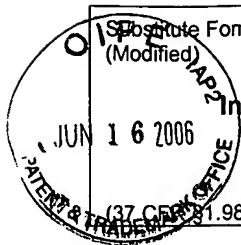
This statement is being filed after a first Office action on the merits, but before receipt of a final Office action or a Notice of Allowance. A check for \$180 in payment of the late submission fee of §1.17(p) is enclosed. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 6 / 14 / 2006

  
Chris C. Bowley  
Reg. No. 55,016

Fish & Richardson P.C.  
225 Franklin Street  
Boston, MA 02110  
Telephone: (617) 542-5070  
Facsimile: (617) 542-8906  
21356621.doc


 Substitute Form PTO-1449  
(Modified)

 U.S. Department of Commerce  
Patent and Trademark Office

 Attorney's Docket No.  
13445-026001

 Application No.  
10/720,453

**Information Disclosure Statement  
by Applicant**

(Use several sheets if necessary)

 Applicant  
Vladimir Fuflyigin

 Filing Date  
November 24, 2003

 Group Art Unit  
1762

**U.S. Patent Documents**

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	H1754	10/1998	Tran et al.			
	AB	3,850,604	11/1974	Klein			
	AC	3,938,974	02/1976	Macedo et al.			
	AD	4,212,663	07/1980	Aslami, Mohd A.			
	AE	4,324,803	04/1982	Bergmann, et al.			
	AF	4,339,173	07/1982	Aggarwal, et al.			
	AG	4,410,345	01/18/83	Usui et al.			
	AH	4,612,294	09/1986	Katsuyama, et al.			
	AI	4,728,350	03/1988	Cocito, Giuseppe			
	AJ	4,730,896	03/1988	Katsuyama, et al.			
	AK	4,733,940	03/1988	Broer et al.			
	AL	4,913,518	04/1990	Fine			
	AM	4,932,752	06/1990	Krashkevich, et al.			
	AN	5,015,844	05/1991	Cole			
	AO	5,344,792	09/1994	Sandhu et al.			
	AP	5,483,614	01/1996	Bruck, et al.			
	AQ	5,609,660	03/1997	Francis et al.			
	AR	5,629,953	05/1997	Bishop, et al.			
	AS	5,641,956	06/1997	Vengsarkar, et al.			
	AT	5,661,839	08/1997	Whitehead			
	AU	5,740,287	04/1998	Scalora, et al.			
	AV	5,802,236	09/1998	DiGiovanni et al.			
	AW	5,812,729	09/1998	Allison, et al.			
	AX	5,814,367	09/1998	Hubbard, et al.			
	AY	5,949,935	09/1999	Schaafsma, et al.			
	AZ	5,991,486	11/1999	Braglia			
	AAA	6,058,127	05/2000	Joannopoulos, et al.			

Examiner Signature

Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 13445-026001	Application No. 10/720,453
<b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Vladimir Fuflyigin	
		Filing Date November 24, 2003	Group Art Unit 1762

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	ABB	6,075,915	06/2000	Koops et al.			
	ACC	6,108,474	08/2000	Eggleton, et al.			
	ADD	6,115,526	09/2000	Morse			
	AEE	6,128,429	10/3/2000	Cole et al.			
	AFF	6,130,780	10/10/2000	Joannopoulos et al.			
	AGG	6,175,671	01/2001	Roberts			
	AHH	6,195,483	02/2001	Moon, et al.			
	AII	6,201,916	03/2001	Eggleton et al.			
	AJJ	6,260,388	07/2001	Borrelli, et al.			
	AKK	6,301,421	10/2001	Wickham, et al.			
	ALL	6,334,017	12/2001	West			
	AMM	6,334,019	12/2001	Birks et al.			
	ANN	6,380,551	04/2002	Abe, et al.			
	AOO	6,389,197	05/2002	Iltchenko, et al.			
	APP	6,404,966	06/2002	Kawanishi et al.			
	AQQ	6,413,891	07/2002	Cho et al.			
	ARR	6,504,645	01/2003	Lenz et al.			
	ASS	6,728,439	4/27/2004	Weisberg et al.			
	ATT	6,788,864	9/7/2004	Ahmad et al.			
	AUU	6,801,698	10/5/2004	King et al.			
	AVV	6,816,243	11/9/2004	Shurgalin et al.			
	AWW	6,879,386	4/12/2005	Shurgalin et al.			
	AXX	6,895,154	5/17/2005	Johnson et al.			
	AYY	6,898,359	5/24/2005	Soljacic et al.			
	AZZ	6,903,873	6/7/2005	Joannopoulos et al.			
	AAAA	2001/0026667	10/2001	Kawanishi, et al.			
	ABBB	2002/0039046	04/2002	Lipson, et al.			

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 13445-026001	Application No. 10/720,453
<b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Vladimir Fuflyigin	
		Filing Date November 24, 2003	Group Art Unit 1762

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	ACCC	2003/0044158	03/2003	King et al.			
	ADDD	2003/0044159	3/6/2003	Anderson et al.			
	AEEE	2004/0013379	1/22/2004	Johnson et al.			
	AFFF	2004/0137168	7/15/2004	Fuflyigin			
	AGGG	2004/0141702	7/22/2004	Fuflyigin et al.			
	AHHH	2004/0223715	11/11/2004	Benoit et al.			
	AIII	2005/0226579	10/13/2005	Fink et al.			
	AJJJ	2005/0259933	11/24/2005	Temelkuran et al.			
	AKKK	2005/0259934	11/24/2005	Temelkuran et al.			
	ALLL	2005/0259942	11/24/2005	Temelkuran et al.			
	AMMM	2005/0259944	11/24/2005	Anderson et al.			
	ANNN	2005/0271340	12/8/2005	Weisberg et al.			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	A000	0955273	11/1999	EP				
	APPP	WO 200284345	10/2002	WIPO				
	AQQQ	WO 200261467	08/2002	WIPO				
	ARRR	2,288,469	10/1995	Great Britain				
	ASSS	0 195 630	09/1986	Europe				
	ATTT	0 426 203	05/1991	Europe				
	AUUU	2000-035521	02/2000	Japan				
	AVVV	2001-051244	02/2001	Japan				
	AWWW	WO 94/09393	04/1994	WIPO				
	AXXX	WO 94/16345	07/1994	WIPO				
	AYYY	WO 97/01774	01/1997	WIPO				
	AZZZ	WO 00/22466	04/2000	WIPO				

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Form PTO-1449 (Modified)  <b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary)  (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office		Attorney's Docket No. 13445-026001	Application No. 10/720,453
	Applicant Vladimir Fuflyigin			
	Filing Date November 24, 2003		Group Art Unit 1762	

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AAAAA	WO 00/46287	08/2000	WIPO				

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	ABBBB	A. Asseh, et al., "10cm Yb <sup>3+</sup> DFB fibre laser with permanent phase shifted grating", Electron. Lett., 31 (12): 969 (1995).
	ACCCC	A. S. Oliveira et al., "Frequency upconversion in Er <sup>3+</sup> /Yb <sup>3+</sup> -codoped chalcogenide glass," Appl. Phys. Lett., 72 (7): 753-755 (1998).
	ADDDD	A. T. Clausen et al., "10-GHz return-to-zero pulse source tunable in wavelength with the single- or multiwavelength output based on four-wave mixing in a newly developed highly nonlinear fiber," IEEE Photon. Technol. Lett., 13 (1): 70-72 (2001).
	AEEEE	Andrea Melloni et al., "All-optical switching in phase-shifted fiber Bragg grating," IEEE Photonics Technology Letters, 12 (1): 42-44, January 2000.
	AFFFF	B. E. Little et al., "Microring resonator arrays for VLSI photonics", IEEE Photon. Technol. Lett., 12 (3): 323-325 (2000).
	AGGGG	Berger V. "From photonic band gaps to refractive index engineering." Optical Materials, 11:2-3, Jan. 1999, pp. 131-142.
	AHHHH	B. J. Eggleton et al., "All-optical switching in long-period fiber gratings," Optics Letters, 22 (12): 883-885, June 15, 1997.
	AIIII	B. J. Eggleton et al., "Grating resonance in air-silica microstructured optical fibers", Opt. Lett., 24 (21): 1460 (1999).
	AJJJJ	B. Malo, et al., "Photosensitivity in phosphorous-doped silica glass and optical waveguides," Appl. Phys. Lett 65 (4): 394 (1994).
	AKKKK	Chang et al. "Vector Normal Modes on Two-Core Optical Fibers – Part I: The Normalmode solutions." Journal of Lightwave Technology, 15:7, Jul. 1997, pp. 1213-1223.
	ALLLL	D. Furniss et al., "A novel approach for drawing optical fibers from disparate core/clad. glasses," J Non-Cryst. Sol. 213-214: 141-146 (1997).
	AMMMM	E. Anderson et al., "Dielectric Materials for Manufacturing Photonic Bandgap Waveguide," US Patent Disclosure, (2001).
	ANNNN	E. Brinkmeyer, et al., "Fibre Bragg reflector for mode selection and line-narrowing of injection lasers", Electron. Lett., 22 (3): 134 (1986).
	AOOOO	Feigel A. et al. "Chalcogenide glass-based three-dimensional photonic crystals." Applied Physics Letters, 77:20, pp. 3221-3223, November 13, 2000.
	APPPP	Fink et al. "Guiding optical Light in Air Using an All-Dielectric Structure," Journal of Lightwave Technology, Vol. 17, no. 11, November 1999
	AQQQQ	G. Meltz, et al., "Formation of Bragg gratings in optical fibers by a transverse holographic method", Opt.Lett., 14 (15): 823 (1989).
	ARRRR	G. S. He et al., "Efficient amplification of a broad-band optical signal through stimulated Kerr scattering in a CS <sub>2</sub> liquid-core fiber system," IEEE J. Quantum Electron., 28 (1): 323-329 (1992).
	ASSSS	H.A. Haus, et al., "Antisymmetric taper of distributed feedback lasers", IEEE J. Quantum Electron., QE-12 (9): 532 (1976).

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 13445-026001	Application No. 10/720,453
<b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary)		Applicant Vladimir Fuflyigin	
		Filing Date November 24, 2003	Group Art Unit 1762
(37 CFR §1.98(b))			

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	ATTTT	I. Gannot, et al., "Current Status of Flexible Waveguides for IR Laser Radiation Transmission", IEEE J. Sel. Topics in Quantum Electr., IEEE Service Center, 2 (4): 880-888 (Dec 1996).
	AUUUU	J. Fick et al., "High photoluminescence in erbium-doped chalcogenide thin films," J. Non-crystalline Solids, 272 (2-3): 200-208 (2000).
	AVVVV	J. Kobelke et al., "Chalcogenide glass single mode fibers--preparation and properties," J. Non-Crystalline Solids, 256-7: 226-231 (1999).
	AWWWV	J. M. Harbold et al., "Highly nonlinear As-S-Se glasses for all-optical switching," Optics Lett., 27 (2): 119-121 (2002).
	AXXXX	J. Marchionda et al., "Advanced rod in tube techniques for fluoride fiber fabrication," Ceramics Transactions, Solid-State Optical Materials, eds. Allan J. Bruce and B.V. Hiremath, 28: 587-596 (1992).
	AYYYY	Johnson et al., "Low-loss asymptotically single-mode propagation in large-core OmniGuide fibers," OPTICS EXPRESS, Vol. 9, No. 13, pages 748-779, December 17, 2001.
	AZZZZ	J. S. Foresi et al., "Photonic-bandgap microcavities in optical waveguides," Nature, 390: 143-145 (November 13, 1997).
	AAAAAA	Jia Jiang et al., "Fluorophosphate cladding glasses for fluoride glass fibers," J Non-Cryst. Sol., 213 and 214: 11-15 (1997).
	ABBBBB	J-X Cai, et al., "Simultaneous tunable dispersion compensation of many WDM channels using a sampled nonlinearly chirped fiber Bragg grating", IEEE Photon. Tech. Lett., 11 (11): 1455 (1999).
	ACCCCC	K. O. Hill, et al., "Photosensitivity in optical fiber waveguides: Application to reflection filter fabrication", Appl. Phys. Lett., 32 (10): 647 (1978).
	ADDDDD	K. O. Hill, et al., "Efficient mode conversion in telecommunication fibre using externally written gratings", Electron. Lett., 26 (16): 1270 (1990).
	AEEEEEE	L. F. Stokes, et al., "All-single-mode fiber resonator", Opt. Lett., 7 (6): 288 (1982).
	AFFFFFF	Louis Poirier et al., "Nonlinear coaxial photonic crystal," Applied Physics Letters, 78 (18): 2626-2628, April 30, 2001.
	AGGGGG	Massadegh R. et al. "Fabrication of single-mode chalcogenide optical fiber." Journal of Lightwave Technology, 16:2, pp. 214-216, February 1998.
	AHHHHH	M. Ibanescu et al., "An all dielectric coaxial waveguide," Science, 289: 415-419 (2000).
	AIIIII	M. Miyagi, et al., "Fabrication of germanium-coated nickel hollow waveguides for infrared transmission", Appl. Phys. Lett., 43 (5): 430 (1983).
	AJJJJJ	Monro, T.M. et al. "Chalcogenide Holey Fibres." Electronics Letters, 36:24, pp. 1998-2000, November 23, 2000.
	AKKKKK	M. Skorobogatiy et al., Optics Express, 10, p. 1227 (2002)
	ALLLLL	M.W. Moore et al., "Sputtering of Chalcogenide Coatings on to Fluoride Glass," Novel Glasses and Processes, pp 193-197.
	AMMMMM	N. Croitoru, et al., "Characterization of hollow fibers for the transmission of infrared radiation", Appl. Opt., 29 (12): 1805 (1990).
	ANNNNN	Nishii, J. et al. "Chalcogenide glass fiber with a core-cladding structure." Applied Optics, 28: 23, pp. 5122-5127, December 1, 1989.
	AOOOOC	Piere R. Villeneuve et al., "Single-mode waveguide microcavity for fast optical switching," Opt. Lett., 21 (24): 2017-2019, December 15, 1996.
Examiner Signature		Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.		

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 13445-026001	Application No. 10/720,453
<b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Vladimir Fuflyigin	
		Filing Date November 24, 2003	Group Art Unit 1762

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	APPPPP	P. Yeh et al., <i>J. Opt. Soc. Am.</i> , 68, p. 1196 (1978)
	AQQQQQ	R. E. Smith et al., "Reduced coupling loss using a tapered-rib adiabatic-following fiber coupler," <i>IEEE Photon. Technol. Lett.</i> , 8 (8): 1052-1054 (1996).
	ARRRRR	R.F. Cregan et al., <i>Science</i> 285, p. 1537-1539, (1999)
	ASSSSS	R. Nubling and J. Harrington "Hollow-waveguide delivery systems for high-power, industrial CO <sub>2</sub> lasers," <i>Applied Optics</i> , 34, No. 3, pp. 372-380 (1996)
	ATTTTT	R. U. Ahmad et al., "Ultracompact corner-mirror and T-branches in silicon-on-insulator," <i>IEEE Photon. Technol. Lett.</i> , 14 (1): 65-76 (January 2002).
	AUUUUU	Sanghera, J.S. et al. "Development and infrared applications of chalcogenide class optical fibers." <i>Fiber and Integrated Optics</i> , 19:3, pp. 251-274, March 1, 2000.
	AVVVVV	Sanghera, J.S. et al. "Fabrication of long lengths of low-loss IR transmitting AS40S (60-X) sex glass fibers." <i>Journal of Lightwave Technology</i> , 14:5, pp. 743-748, May 1, 1996.
	AWWWWW	S. Coen et al., "White-light supercontinuum generation with 60-ps pump pulses in a photonic crystal fiber," <i>Opt. Lett.</i> , 26 (17): 1356-1358 (2001).
	AXXXXX	S. Ramachandran and S. G. Bishop, "Low loss photoinduced waveguides in rapid thermally annealed films of chalcogenide glasses," <i>Appl. Phys. Lett.</i> , 74 (1): 13-15 (1999).
	AYYYYY	Stojan Radic et al., "Theory of low-threshold optical switching in nonlinear phase-shifted periodic structures," <i>J. Opt. Soc. Am. B</i> , 12 (4): 671-680, April 1995.
	AZZZZZ	T. Cardinal et al., "Non-linear optical properties of chalcogenide glasses in the system As-S-Se," <i>J. Non-Crystalline Solids</i> , 256-7: 353-360 (1999).
	AAAAAA	T.A. Birks et al., "Dispersion Compensation Using Single-Material Fibers," <i>IEEE Photonics Technology Letters</i> , 11 (6): 674-676 (1999).
	ABBBBB	Y. Fink et al., "Block copolymers as photonic band gap materials," <i>J. Lightwave Tech.</i> , 17 (11): 1963-1969, (JLT IEEE-special issue on photonic crystals-invited paper) (1999).
	ACCCCC	Y. Matsuura, et al., "Hollow glass waveguides with three layered dielectric coating fabricated by chemical vapor deposition," <i>J. Opt. Soc. Amer.</i> , 14 (6): 1255 (1997).
	ADDDDD	Y. Matsuura, et al., "Optical properties of small-bore hollow glass waveguides", <i>J. Opt. Soc. Amer.</i> , 34 (30): 6842-6847 (1995)
	AEEEEEE	Y. Yamamoto et al., <i>Phys. Today</i> , 46: 66-73 (1993).
	AFFFFFF	Yoel Fink et al., "A dielectric omnidirectional reflector," <i>Science</i> , 282: 1679-1682 (1998).
	AGGGGG	Yong Xu et al., "Asymptotic Analysis of Bragg Fiber," <i>Optics Letters</i> , 25 (24): 1756-1758 (2000).
	AHHHHH	

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	